Remarks

Applicants make no amendments in response to the Office Action dated August 2, 2005 since they firmly believe that the invention as presently defined in the claims is patentably distinct from the prior art references cited by the Examiner.

Claims 1 to 84 stand rejected under 35 USC §103(a) as being unpatentable over Ramakrishnan (US Patent No. 6,167,029) in view of Tang (US Patent No. 6,195,332). Applicants respectfully traverse this rejection for the following reasons:-

Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness. In *ex parte* examination of patent applications, the Patent and Trademark Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent and Trademark Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of non-obviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent and Trademark Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985). A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject

matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2142.

In the present case, the Examiner concedes that Ramakrishnan does not disclose that frame based data are transmitted over a synchronous digital network. However, the Examiner argues that:

> "Tang discloses a flow control technique in an Ethernet-over-ring communications network (Fig. 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Ramakrishnan and Tang and to incorporate the flow control technique of Ramakrishnan in a frame based over SONET network, e.g., Ethernet over SONET, to increase security, reliability, support bandwidth-intensive applications, improve network utilization, and provide QoS options for differentiated services."

No motivation or suggestion to combine

Applicants accept that Tang discloses a flow control technique in an Ethernet-over-ring communications network. However, Applicants have found no teaching

in either Tang or Ramakrishnan which would motivate or suggest incorporating the flow control technique of Ramakrishnan in the Ethernet-over-ring communications network of Tang.

The Examiner argues that the motivation of one skilled in the art would be "to increase security, reliability, support bandwidth-intensive applications, improve network utilization, and provide QoS options for differentiated services."

The Examiner is reminded that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Moreover, the Examiner is reminded that the motivation must be to modify the reference or to combine reference teachings themselves. In other words, the motivation must be to incorporate the particular flow control technique of Ramakrishnan in the particular Ethernet-over-ring communications network of Tang. The Examiner has failed to identify any teaching in either Tang, Ramakrishnan or generally in the prior art which evidences such motivation.

On the contrary, Applicants believe that one skilled in the art would not be motivated to incorporate the flow control technique of Ramakrishnan in the Ethernet-over-ring communications network of Tang for the following reasons.

1) Tang teaches a flow control method which is technically incompatible with that of Ramakrishnan and which has different objectives. In claim 1, Tang teaches:

> "In a ring-topology communication network communicatively coupling a plurality of network nodes each representing a local area network (LAN), a method for controlling a transmission of a plurality of data packets on said ring-topology communication network using ethernet packet format

and equipment, said method comprising the computer implemented steps of:

a) determining a flow path for each of said plurality of data packets in said communication network;

b) calculating a data transmission rate limit for each of a plurality of flow paths through each of said plurality of network nodes onto said communication network, said limit based upon said flow path of each of said plurality of data packets, wherein said data packets have controlled access to transmit on said communication network, said plurality of limits provided to equitably share transmission resources;

c) adaptively adjusting said data transmission limit for each of said plurality of flow paths depending upon traffic conditions in each of said plurality of network nodes;

d) controlling said transmission of said data packets on said flow paths according to said limits respectively calculated for said data packets;

e) dividing a bandwidth of a channel immediately downstream of said network node by said net tributary flow limit; and

f) multiplexing said data packets flowing from upstream of said node with data packets flowing from said tributary of said node in a ratio equal to said net tributary flow limit. " [emphasis added]

Thus, Tang teaches that computer system (computer system 200 of Fig. 2) determines flow paths, and correspondingly data transmission rate limits, for each of said plurality of data packets in said communication network and controls the transmission of packets on all of the flow paths according to the limits. In other words, Tang teaches a centralized transmission control protocol in which control of network-wide traffic flows is performed in a coordinated manner. This is consistent with a major objective of Tang which is to:

"provide a protocol to regulate traffic in a manner that ensures fairness in the amount of data transmitted on the network." (column 5, lines 19-21)

In contrast, Ramakrishnan teaches a particular technique of flow control which is distributed in that it is performed independently at each of the multitude of local Ethernet interface cards in an Ethernet LAN. For example, in claim 1 Ramakrishnan teaches:

"An integrated circuit for supporting a network connection, said integrated circuit comprising:

a transmit buffer for storing outgoing frames to be transmitted to a remote station;

a receive buffer for storing incoming frames;

a pause frame controller that evaluates utilized capacity of said receive buffer and issues an internal pause frame request when the utilized capacity exceeds a threshold amount; and

a pause frame generator, operatively connected to said pause frame controller, said pause frame generator generates a pause frame and causes the pause frame to be transmitted with priority over other outgoing frames to be transmitted when said pause frame controller issues the internal pause frame request. " [emphasis added]

Thus, Ramakrishnan teaches a particular flow control technique performed at each Ethernet interface card independently. There is no centralized transmission control protocol and no coordination of network-wide traffic flows. This is consistent with the entirely different objective of Ramakrishnan which is:

"to have a system and method for controlling the flow of data between points in a network environment such that the amount of transmitted data lost is reduced." (column, lines 56-59)

Thus, the flow control techniques of Tang and Ramakrishnan are technically incompatible since Tang teaches a centralized transmission control protocol in which control of network-wide traffic flows is performed in a coordinated manner whereas Ramakrishnan teaches a technique of flow control which is distributed in that it is performed independently at each of the multitude of local Ethernet interface cards in an Ethernet LAN. It is unclear how one skilled in the art would be able to combine the teachings of these contrasting approaches.

In summary, one skilled in the art would not be motivated to incorporate the flow control technique of Ramakrishnan in the Ethernet-over-ring communications network of Tang since they are technically incompatible and have different objectives.

2) As admitted by the Examiner, Ramakrishnan does not disclose that frame based data are transmitted over a synchronous digital network. Ramakrishnan discloses a flow control technique for a conventional Ethernet LANs. However, Tang teaches that:

"While Ethernet protocol and hardware is ubiquitous for LAN systems, it has not been a viable option for WAN operation. The ethernet collision detection protocol limited the overall length of the network. For a data packet to successfully transmit on ethernet protocol, the time for the packet to transmit with no collision detection being returned to the sender is theoretically equivalent to the round trip of the furthest path in the network. For a WAN, this distance can be very high. Using ethernet collision detection protocol on a

> WAN would increase the frequency of collisions, and increase the response time to a point where the system may be perpetually incapacitated. Hence, a need existed for a different protocol that would successfully transmit an ethernet packet on ethernet hardware over a long distance while assuring equity to transmit on the network. In this way, communications between LANs could be seamless, efficient, reliable, and cost-effective." (column 2, line 7-23)

Accordingly, Tang teaches that a different – ie non-LAN based – protocol be used for achieving equitable transmission of Ethernet over the long distances of WANs. Thus, tang teaches away from using the LAN-based technique for flow control as taught by Ramakrishnan.

No reasonable expectation of success

For the reasons given above why Tang and Ramakrishnan are technically incompatible, it is also submitted that one skilled in the art would have no reasonable expectation of success in attempting to incorporate the flow control technique of Ramakrishnan in the Ethernet-over-ring communications network of Tang.

In view of the Applicants belief that the Examiner has failed to establish a *prima facie* case of obviousness, Applicants have not considered in detail and make no admissions in respect of the Examiner's allegations of the teachings of each of the references cited. Applicants reserve the right to respond on this issue if the Examiner decides to maintain the allegation of obviousness.

In summary, Applicants believe that the Examiner has indulged in impermissible hindsight reasoning by mosaicing incompatible prior art references using the Applicants' own disclosure as a template. Applicants therefore request favorable reconsideration and that the present application be allowed.

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Respectfully submitted,

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